

09/884,429 filed 06/18/2001  
David Chazan, et al.  
Reply to Final Office Action of 05/19/2006

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### REMARKS/ARGUMENTS

Claims 13, 28-31, 33-77, and 79-81 are pending in the above-captioned application. All of these claims stand rejected. With this paper, Applicants have additionally amended claims 13, 29, 33-38, and 40 and have canceled claims 46-77, while retaining the right to pursue the canceled claims in a divisional application. Cancellation of the non-elected claims does not necessitate an amendment to the inventorship.

#### I. Claim Interpretation

The Examiner has interpreted a "venting element" as essentially any cavity, channel, or equivalent. Applicants have amended the claims of the present application in light of this interpretation. In the amended claims, the term "venting" is used only as an identifier and is not intended to distinguish the venting element from any other structure on the basis of a function or intended use.

#### II. Claim rejections under 35 U.S.C. § 112, first paragraph

Claims 13, 28-31, 33-45, and 79-81 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner objected to the negative limitation citing "the venting element having no fluid communication with functionalized regions of the fabrication element." The Examiner stated that the term "functionalized regions" does not appear in any of the passages cited in support of the negative limitation. The claims have been amended to eliminate the term "functionalized regions" from independent claims 13, 29, and 81.

The term has been replaced in independent claim 13 with "any other component disposed on or through the first and second substrates." Support for the negative limitation of "the venting element not in fluid communication with any other component disposed on or through the first and second substrates" in amended independent claim 13 can be found on, for example, page 3, lines 26-28, on page 14, line 25, through page 15, line 7, as well as in Figures 3, 8A, and 8B, which show venting cavities 306 and venting cavities/channels 806, respectively, as not in fluid communication with any other component.

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Applicants wish to point out that text in the previously presented claims 13 and 29 relating to the venting element thermally insulating and reducing thermal coupling has been eliminated. It was added in response to the Examiner's September 21, 2004, Office action indicating that claim 13 would be allowable if amended to include the base claim and any intervening claims. It is eliminated in response to the Examiner's subsequent rejection of the amended claims and the statements on pages 6 and 8 of the current Office action indicating that providing thermal insulation and reduction of thermal coupling, as well as stagnant vapor regions, are inherent properties of openings in a device. Under this current interpretation, the phrases do not add patentable weight to the claims and merely clutter the claims.

Claim 29 has been amended to eliminate the term "functionalized regions." Instead, the reciting of a microchannel network has been moved to the beginning of the claim, and the claim now recites that a venting channel is "disposed along at least a portion of a side of one or more of the microchannels" of the microchannel network. Support for the limitation in quotation marks can be found on page 12, lines 24-26. The venting channel is further limited to being disposed "such that it does not intersect with any microchannel in the microchannel network." Support for this limitation can be found on page 14, line 32, through page 15, line 3. Support for both added limitations can also be found in Figures 2A, 2B, 8A, and 8B.

In claim 81, the negative limitation citing "the venting channel network having no fluid communication with functionalized regions of the fabrication element" has been eliminated and replaced with the "the venting channel network disposed in at least one of the first and second substrates such that it does not intersect with any other component disposed in the first and second substrates." Support for this limitation can be found on page 14, line 32, through page 15, line 3, as well as in, for example, Figures 2A and 2B.

Therefore, independent claims 13, 29, and 81 are in compliance with the written description requirement. As a result, claims 28, 30, 31, 33-45, 79, and 80, which depend either directly or indirectly from independent claim 29, are similarly in compliance. Withdrawal of the rejection of these claims under 35 U.S.C. § 112, first paragraph, is respectfully requested. Applicants wish to point out that claims 33-38 and 40 have been amended in keeping with the amendments to independent claim 29, from which they depend.

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III. Claim rejections under 35 U.S.C. § 112, second paragraph

Claims 13, 29, and 81 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. The Examiner stated that the term "functionalized regions" had not been defined in the specification or claims. As previously discussed, the term "functionalized regions" has been eliminated from independent claims 13, 29, and 81. Therefore, independent claims 13, 29, and 81 are no longer indefinite. Withdrawal of the rejection of these claims under 35 U.S.C. § 112, second paragraph, is respectfully requested.

IV. Claim rejection under 35 U.S.C. § 102(b) as being anticipated by Sethi et al. (US 4,891,120)

Claim 13 was rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sethi et al. (US 4,891,120). This rejection is respectfully traversed. "[F]or anticipation under 35 U.S.C. § 102, a single reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." MPEP § 706.02. "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, USPQ2d 1913, 1920 (Fed. Cir. 1989).

At a minimum, Sethi et al. do not teach a fabrication element comprising a body structure having at least one venting element "not in fluid communication with any other component disposed on or through the first and second substrates." The Examiner has read Applicants' venting element on longitudinal channel 1 of Sethi et al. As described by the Examiner on page 7 of the present application, channel 1 carries "at least one electrode 6 positioned intermediate the channel ends." Channel 1 is described in column 4, lines 49 and 50, as containing an agarose solution. The agarose solution would place electrode 6 in fluid communication with channel 1. Channel 1 is described in column 5, lines 36-38, as alternatively being filled with chromatographic media for the resolution of gasses and volatiles by gas or liquid chromatography. Both gas and liquid chromatography would place channel 1 in fluid communication with electrode 6. Thus, channel 1 cannot be read as "not in fluid communication

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with any other component disposed on or through" the substrates of Sethi et al. (i.e., the silicon wafer body and Pyrex glass cover plate, as taught in column 3, line 14-30).

Thus, Sethi et al. do not teach every aspect of the claimed invention either explicitly or impliedly, nor do they show the identical invention claimed by Applicants in as complete detail as is contained in independent claim 13. Withdrawal of the rejection of claim 13 under U.S.C. § 102(b) as being anticipated by Sethi et al. is, therefore, respectfully requested.

**V. Claim rejections under 35 U.S.C. § 102(e) as being anticipated by Dubrow et al. (US 6,756,019)**

Claims 13, 28-31, 79, and 80 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Dubrow et al. (US 6,756,019). This rejection is respectfully traversed.

With regard to amended independent claim 13, at a minimum Dubrow et al. do not teach a fabrication element comprising a body structure having at least one venting element "not in fluid communication with any other component disposed on or through the first and second substrates." As acknowledged by the Examiner, Dubrow et al. teach microfluidic devices comprising at least a first microscale channel network, ports in fluid communication with one or more channels in the network, and apertures aligned with the ports and, by association, in fluid communication with the one or more channels. Thus, no element of the device taught by Dubrow et al. is described or illustrated as not in fluid communication with any other component of the device.

Therefore, Dubrow et al. do not teach every aspect of the claimed invention either explicitly or impliedly, nor do they show the identical invention claimed by Applicants in as complete detail as is contained in independent claim 13. Withdrawal of the rejection of claim 13 under U.S.C. § 102(e) as being anticipated by Dubrow et al. is, therefore, respectfully requested.

With regard to amended independent claim 29, at a minimum Dubrow et al. do not teach a "channel disposed along at least a portion of a side of one or more ... microchannels such that it does not intersect with any microchannel in the microchannel network." The channels taught by Dubrow et al. are all elements of a microscale channel network. Nowhere do Dubrow et al. teach a channel that is separate from this microscale channel network and does not intersect with any channel in the microscale network.

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Therefore, Dubrow et al. do not teach every aspect of the claimed invention either explicitly or impliedly, nor do they show the identical invention claimed by Applicants in as complete detail as is contained in independent claim 29. Withdrawal of the rejection of claim 29 under U.S.C. § 102(e) as being anticipated by Dubrow et al. is, therefore, respectfully requested.

Claims 28, 30, 31, 79, and 80 depend directly or indirectly from independent claim 29. Therefore, Applicants respectfully submit that these claims are allowable for at least the same reasons as set forth herein with respect to independent claim 29. Withdrawal of the rejection of dependent claims 28, 30, 31, 79, and 80 under U.S.C. § 102(e) as being anticipated by Dubrow et al. (US 6,756,019) is respectfully requested.

### Conclusion

For the foregoing reasons, Applicants believe all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned attorney.

Respectfully submitted,



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